




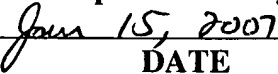
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Rupert B. Hurley Jr.


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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : RAMESH et al.

Group Art Unit: 3721

Serial No : 09/764,673

Examiner: C.R. Harmon

Filing Date: Jan. 18, 2001

Attorney Docket No.: 42035-06

For: **BACKSEAMED CASING AND PAKCAGED PRODUCT**
INCORPORATING SAME

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SECOND CORRECTED APPEAL BRIEF UNDER 37 CFR § 41.37

Sir:

This Second Corrected Appeal Brief is filed in response to the Notification of Non-compliant Appeal Brief mailed 15 November 2006, the one month or thirty day response period being extended one month, i.e., through 15 January 2007, by the enclosed request for a one-month extension of time. However, in the event that a further extension of time is deemed to be due, Appellants request that such extension be granted,

and Appellants authorize the Commissioner to charge Appellants’ deposit account 07-1765 in the appropriate amount.

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(1) Real Party in Interest

The real party in interest is Cryovac, Inc., assignee of the above-referenced patent application.

(2) Related Appeals and Interferences

There are no other appeals, interferences or judicial proceedings known to Appellant, Appellant's legal representative, or Assignee which may be related to, directly affect, be directly affected by, or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The pending claims are claims 29-48 and 50-57, each of which stands rejected. Claims 1-28 and 49 stand cancelled. Appellants appeal the rejection of Claims 29-48 and 50-57. Claims 29 and 48 are the only independent claims on appeal. A copy of all of the pending claims appears in the Appendix.

(4) Status of Amendments

An Amendment under 37 CFR 1.116 accompanied the appeal brief filed 28 September 2006. Although Appellants have not received any paper indicating whether the §116 amendment has been entered, the absence of a communication refusing entry of the amendment indicates that the §116 amendment has in fact been entered by the examiner. The §116 amendment merely cancels dependent claim 49. As such, the §116 amendment raises no new issues and places the claims in better form for appeal, and should therefore have already been entered by the examiner.

(5) Summary of the Claimed Subject Matter

Independent Claim 29 is directed to a process for making a backseamed casing, comprising: (A) preparing a multilayer heat-shrinkable film [see Page 5 lines 17-18 and Page 41 lines 3-4], (B) wrapping the film longitudinally around a forming shoe with opposing length film sheet edges being overlapped or abutted with one another [see Page 45 lines 4-5 and Page 2 lines 14-18] (C) sealing the film longitudinally to form a backseam [see Page 45 lines 5-8 and Page 2 lines 18-21], and (D) forwarding the film [see Page 3 lines 21-24 and Page 45 lines 8-13]. In the multilayer film, the first outer layer serves as an inside casing layer [see Page 5 lines 20-21]. The first outer layer comprises a first polyolefin [see Page 5 lines 20-21]. The first polyolefin comprises at least one member selected from the group consisting of (i) ethylene/unsaturated acid copolymer, propylene/unsaturated acid copolymer, and butene/unsaturated acid copolymer, wherein the unsaturated acid is present in an amount of at least 4 weight percent, based on the weight of the copolymer [see Page 5 lines 21-25], and (ii) anhydride-containing polyolefin comprising an anhydride-functionality, wherein the anhydride functionality is present in an amount of at least 1 weight percent, based on the weight of the anhydride-containing polyolefin [see Page 5 lines 25-28]. In the multilayer film, the second layer comprises at least one member selected from the group consisting of polyester and a first polyamide [see Page 5 lines 28-29]. In the multilayer film, the third layer serves as an outside casing layer comprising at least one member selected from the group consisting of second polyolefin, polystyrene, and a second polyamide [see Page 5 line 29 through Page 6 line 1]. The second layer is between the first layer and the

third layer [see Page 5 line 20], with the film having has a thickness of at least 5% of a total thickness of the heat-shrinkable casing film [see Page 6 lines 1-2].

Independent Claim 48 is also directed to a process for making a backseamed casing, comprising: (A) preparing a multilayer heat-shrinkable film [see Page 5 lines 17-18 and Page 41 lines 3-4], (B) wrapping the film longitudinally around a forming shoe with opposing length film sheet edges being overlapped or abutted with one another [see Page 45 lines 4-5 and Page 2 lines 14-18] (C) sealing the film longitudinally to form a backseam [see Page 45 lines 5-8 and Page 2 lines 18-21], and (D) forwarding the film [see Page 3 lines 21-24 and Page 45 lines 8-13]. In the multilayer film, the first outer layer serves as an inside casing layer [see Page 5 lines 20-21]. The first outer layer has a surface energy level of less than about 34 dynes/cm [see Page 9 lines 12-13]. The first outer layer comprises a first polyolefin [see Page 5 lines 20-21]. In the multilayer film, the second layer comprises at least one member selected from the group consisting of polyester and a first polyamide [see Page 5 lines 28-29]. In the multilayer film, the third layer serves as an outside casing layer comprising at least one member selected from the group consisting of second polyolefin, polystyrene, and a second polyamide [see Page 5 line 29 through Page 6 line 1]. The second layer is between the first layer and the third layer [see Page 5 line 20], with the film having has a thickness of at least 5% of a total thickness of the heat-shrinkable casing film [see Page 6 lines 1-2]. The first outer layer does not comprise a blend of a propylene/ethylene copolymer and homogeneous ethylene/alpha-olefin copolymer having a density of less than 0.90 g/cc wherein the blend makes up a majority of the first outer layer [see Page 30 lines 6-10].

(6) Grounds of Rejection to be Reviewed on Appeal

I. Whether Claims 29-38, 40-48, and 50-57 Are Unpatentable as Obvious over

ANDERSON et al in view of OHYA

II. Whether Claim 39 is unpatentable as Obvious over ANDERSON et al in view of

OHYA further in view of SCHIRMER

(7) Argument

I. The Claimed Invention Solves a Problem

In the invention of both independent Claims 29 and 48, the multilayer film is wrapped around a forming shoe and backseamed, followed by being forwarded. It has been discovered that the second layer (which is an internal layer, as it is between the first layer and the third layer) having a thickness which is at least about 5% of the total thickness of the multilayer film, prevents the film from necking down on the forming shoe during backseaming. See Page 43 line 21 through Page 53 line 18, i.e., Examples 1-6, each of which exhibited good backseamability without necking down problems, each film having the recited internal layer comprising nylon. Without the recited second layer, it was found that the necking down of the film on the forming shoe occurs to the extent that the film tightens so much around the forming shoe that the film splits or cannot be forwarded off of the forming shoe. See Page 55 line 24 through Page 56 line 29, which shows that a film wholly lacking an internal layer comprising polyamide and/or polyester exhibited a severe necking down problem. See also Page 53 line 19 through Page 54 line 23, which exemplifies that a nylon layer having a thickness of only 3.9 percent of total film thickness exhibited intermittent film rupture due to necking down on the forming shoe.

I. Claims 29-38, 40-48, and 50-57 Are Patentable over ANDERSON in view of OHYA

Claims 29-38, 40-48, and 50-57 stand rejected as obvious over U.S. Patent No. 3,130,647, to Anderson et al ("ANDERSON et al") in view of EP 0 149 321, to Ohya ("OHYA"). In the 20 January 2006 final Office Action, ANDERSON et al is relied on

for the backseaming of a multilayer heat-shrinkable film which is “wrapped longitudinally around a forming shoe” with opposing edges overlapped and sealed forming a backseam while forwarding the film. The final Office Action refers to FIG. 13 of ANDERSON et al, and further states that ANDERSON et al refers to at least only ply of the multilayer web contains polyethylene, styrene, nylon, etc. The Office Action relies upon OHYA for the teaching of a multilayer heat shrinkable film having outer polyolefin layers and a second layer comprising polyester or polyamide having a thickness of from 5-40% of the total film thickness, and a fourth layer which is a barrier layer. On the basis, the Office Action concludes that it would have been obvious to use the materials of OHYA in the invention of ANDERSON et al and thereby carry out Appellants’ claimed process of making a backseamed casing.

Appellants contend that the Office Action fails to make out a prima facie case of obviousness. Appellants contend that Claims 29-38, 40-48, and 50-57 are patentable over ANDERSON et al in view of SCHIRMER for at least two reasons: (1) ANDERSON et al in view of SCHIRMER does not establish a prima facie case of obviousness, and (2) even if a prima facie case of obviousness of Claims 29-48 has been made out (which is not the case), Applicant’s have set forth unexpected results of Claims 29-48 over ANDERSON et al in view of SCHIRMER.

Before turning to a discussion of the specifics of ANDERSON et al and SCHIRMER, Applicants note that each of the pending independent claims is directed to a process in which a multilayer film is wrapped around a forming shoe and backseamed, followed by being forwarded. The multilayer film has first and third layers which are

outer film layers, and a second layer (which is an internal layer, because it is between the first layer and the third layer) having a thickness which is at least 5% of the total thickness of the multilayer film. The second layer comprises polyamide and/or polyester. Applicants have discovered that the presence of an internal layer comprising polyamide and/or polyester and having a thickness of at least 5% of the total film thickness solves a problem. The problem is that the film necks down on the forming shoe during backseaming, i.e., shrinks tightly against the forming shoe during backseaming. The necking down of the film on the forming shoe has been found to occur to the extent that the film tightens so much around the forming shoe that the film splits or cannot be forwarded off of the forming shoe because it is so tight around the forming shoe. The presence of the internal layer comprising nylon and/or polyester, having a thickness of at least 5% of the total film thickness, decreases the necking down to the extent that film splitting and inability to forward the film no longer occur during the backseaming process. Thus, Appellants' recited film, used in Appellants' claimed process, solves the necking-down-on-the-forming-shoe-problem which is not appreciated by the prior art. This problem, and its solution, are not appreciated by the prior art. Moreover, the prior art does not teach or suggest Appellants' recited process steps, as discussed in detail below.

Turning now to the lack of a prima facie case of obviousness, Applicants first direct attention to FIG. 13 of ANDERSON et al.

As can be seen, the “multilayer web strip” (41, 42) is passed through a “folding and sealing station” in which the “marginal edge portions” of the web strip are “overlapped and bonded together”. [FIG. 13 and Col. 5 lines 14-23] It is important to note that the film passes *inside* the conic-shaped folding member. See FIG. 13. Because the film is inside the folding member, *it is not possible for the film to “neck down” against the folding member*, because the film is not “wrapped around” the folding member. That is, shrinkage of the film during sealing will cause the film to move *inward and away* from the conic-shaped folding member. Shrinkage during sealing does not cause the film to move *inward and toward* the folding member. Thus, since neither ANDERSON et al nor OHYA discloses a film which is sealed while it is wrapped around a forming shoe (as recited by Appellants’ only independent claims, i.e., Claims 29 and 48, the only pending independent claims on appeal), ANDERSON et al in view of OHYA clearly fails to establish a prima facie case of obviousness of any one or more of Claims 29-38, 40-48, and 50-57.

In response to Applicants’ arguments, Paragraph 6 of the 20 January 2006 final Office Action states that ANDERSON et al discloses “a forming shoe includ[ing] forming surface 43 which extends inside (i.e., is completely encircled) the longitudinally wrapped web in order to form the backseam.” The Office Action goes on to

acknowledge that in ANDERSON et al the web wraps around the inner surface of the forming shoe, rather than the outer surface of the forming shoe, but thereafter states that “...the web does wrap around element 43 which is an essential part of the forming shoe; see figure 13.”

Appellants contend that the web in FIG. 13 is not wrapped around the forming shoe, as recited in each of Appellants’ independent claims. Rather, the web in FIG. 13 passes *inside* of the folding member, as acknowledged by the Examiner in the final Office Action. As such, it is *impossible* for the web to shrink down tightly against the folding member.

As to element 43 in FIG. 13, Appellants note that “opposed elements 43 and 44...apply[ing] heat and pressure”, i.e., to seal the longitudinal edges of the web together to make a backseamed film tubing. See Col 5 lines 17-19 of ANDERSON et al. While element 43 is partially within the folded web, and while a portion of element 43 is completely encircled by the longitudinally wrapped web, it is clear that element 43 is not a forming shoe, and it also clear that element 43 is far smaller than a forming shoe. Element 43 is designed for sealing the film edges together, rather than carrying out the function of a forming member or forming shoe. A forming member or forming shoe is designed to control the manner in which the film is formed or folded into a tubing.

Paragraph 6 of the final Office Action errs in referring to element 43 as “an essential port of the forming shoe”. Rather, Col. 5 line 17-19 of ANDERSON et al refers to “...opposed elements 43, 44 for applying heat and pressure.” Clearly, element 43 is a sealing member, not a forming surface. In fact, a brief study of FIG. 13 reveals that

element 43 does not even touch the unnumbered forming member. In FIG. 13 of ANDERSON et al, it is the forming member alone which controls the manner in which the web is configured before the web is sealed to make the tubing. Clearly, the forming member in FIG. 13 of ANDERSON et al is the unnumbered tapered hollow sleeve that surrounds the web as it is being reconfigured for sealing. Because web 41 is inside of this forming member, the shrinkage of web 41 cannot possibly result in necking down against the forming shoe.

Moreover, it is unreasonable to consider the film as potentially necking down against sealing element 43, which is far too small to present any obstacle for a heat shrinkable film which shrinks due to heat sealing. One of ordinary skill in the art would not consider sealing element 43 to interfere with the forwarding of a film that shrinks slightly during heat sealing.

Thus, even if one were to alter the film of ANDERSON et al by substituting different polymers based on the film of OHYA, the result would not be Appellants' claimed process, because neither ANDERSON et al nor OHYA teach or suggest a heat shrinkable film wrapped around a forming shoe. ANDERSON et al in view of OHYA does not generate a prima facie case of obviousness of any one or more of Appellants' claims 29-38, 40-48, and 50-57.

In addition, Applicants contend that their invention provides unexpected results. The prior art relied on in the office action contains no teaching or suggestion that providing a heat shrinkable film with an internal layer having a thickness of at least 5% of the total film thickness, the internal layer comprising nylon and/or polyester, provides

the process with a film capable of being wrapped around a forming shoe and sealed longitudinally to make a backseam without necking down on the forming shoe to the extent that the film cannot be forwarded or splits on the forming shoe. Applicants' invention is the solution to a problem, and the prior art has no teaching or suggestion regarding either the problem or its solution. In fact, the prior art relied upon in the rejection does not even teach or suggest "wrapping the film longitudinally around a forming shoe" as recited in each of Applicants' independent claims. Preventing the film from necking down on the forming shoe is an unexpected result. The prior art relied upon in the rejections contains no teaching or suggestion that the film recited in Appellants' claims would prevent the necking-down-on-the-forming-shoe-problem.

Further in this regard, Applicants direct attention to the backseaming results for Applicants' Examples 1-6 with the comparative results provided for Applicants' Comparative Examples 7 and 9, as set forth on Pages 43-56, as well as the summary on Page 62 line 14 through Page 73 line 26 of Applicants' specification. Applicants contend that even if a prima facie case of obviousness has been made out, the results set forth in Applicants' specification rebut the prima facie case with evidence of unexpected results and problem solved.

II. Claim 39 Is Patentable over ANDERSON in view of OHYA, further in view of SCHIRMER

Claim 39 is s 29-38, 40-48, and 50-57 stand rejected as obvious over ANDERSON et al OHYA further in view of US. Patent No. 4,448,792, to Schirmer ("SCHIRMER"). ANDERSON et al and OHYA are relied on as in the first rejection.

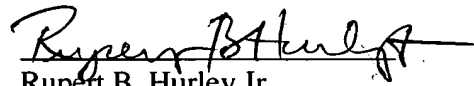
SCHIRMER is relied upon for the disclosure of a six-layer heat-shrinkable film having an oxygen barrier layer.

In response, Appellants contend that Claim 39 is patentable over ANDERSON et al in view of OHYA further in view of SCHIRMER for at least the same reasons that Claims 29-38, 40-48, and 50-57 are patentable over ANDERSON et al in view of OHYA, i.e., the reasons set forth above. While SCHIRMER discloses a multilayer heat shrinkable film having a barrier layer, it would not have been obvious to arrive at Appellants' invention by using the film of SCHIRMER to modify the invention of ANDERSON et al. Neither ANDERSON et al nor OHYA nor SCHIRMER teach or suggest a process in which a multilayer heat shrinkable film is wrapped around a forming shoe and sealed to form a backseamed casing which is then forwarded off of the forming shoe.

III. CONCLUSION

Applicants contend that all of the pending claims on appeal are in condition for allowance. Reconsideration of the patentability of the claims is respectfully requested, with a view towards reversal of the rejections. Should there be any questions or comments, the Board is invited to contact the undersigned at the telephone number provided below.

Respectfully Submitted,

A handwritten signature in black ink, appearing to read "Rupert B. Hurley Jr.", written over a horizontal line.

Rupert B. Hurley Jr.

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15 January 2007

(8) Claims Appendix

Claims 1-28 (cancelled)

Claim 29: A process for making a backseamed casing, comprising:

(A) preparing a multilayer heat-shrinkable film comprising:

(i) a first outer layer serving as an inside casing layer, the first outer layer comprising a first polyolefin comprising at least one member selected from the group consisting of:

(a) ethylene/unsaturated acid copolymer, propylene/unsaturated acid copolymer, and butene/unsaturated acid copolymer, wherein the unsaturated acid is present in an amount of at least 4 weight percent, based on the weight of the copolymer; and

(b) anhydride-containing polyolefin comprising an anhydride-functionality, wherein the anhydride functionality is present in an amount of at least 1 weight percent, based on the weight of the anhydride-containing polyolefin;

(ii) a second layer comprising at least one member selected from the group consisting of polyester and a first polyamide; and

(iii) a third layer serving as an outside casing layer, the third layer comprising at least one member selected from the group consisting of second polyolefin, polystyrene, and a second polyamide; and

wherein the second layer is between the first layer and the third layer, with the film having has a thickness of at least 5% of a total thickness of the heat-shrinkable casing film;

- (B) wrapping the film longitudinally around a forming shoe with opposing length film sheet edges being overlapped or abutted with one another;
- (C) sealing the film longitudinally to form a backseam; followed by
- (D) forwarding the film.

Claim 30: The process according to claim 29, wherein the third layer comprises the second polyolefin.

Claim 31: The process according to claim 30, wherein the second layer comprises the first polyamide.

Claim 32: The process according to claim 30, wherein the first layer further comprises a third polyolefin comprising at least one member selected from the group consisting of polyethylene homopolymer, polyethylene copolymer, polypropylene homopolymer, polypropylene copolymer, polybutene homopolymer, and polybutene copolymer.

Claim 33: The process according to claim 32, wherein the second polyolefin has a vicat softening point of at least 90°C, and the third polyolefin has a vicat softening point of at least 90°C.

Claim 34: The process according to claim 33, wherein the first polyolefin comprises an ethylene/unsaturated acid copolymer having an unsaturated acid mer

present in an amount of at least 9 percent, based on the weight of the ethylene/unsaturated acid copolymer.

Claim 35: The process according to claim 33, wherein the third layer comprises the second polyamide.

Claim 36: The process according to claim 30, wherein the first polyolefin comprises an ethylene/unsaturated acid copolymer, the unsaturated acid is present in an amount of at least 6 weight percent, based on the weight of the ethylene/unsaturated acid copolymer.

Claim 37: The process according to claim 36, wherein the casing film further comprises a fourth layer, the fourth layer being an inner layer serving as an O₂-barrier layer, the fourth layer comprising at least one member selected from the group consisting of ethylene/vinyl alcohol copolymer, polyvinylidene chloride copolymer, polyethylene carbonate copolymer and polyamide.

Claim 38: The process according to claim 37, wherein the second layer and the fourth layer are directly adhered.

Claim 39: The process according to claim 37, wherein the casing film further comprises a fifth layer and a sixth layer, wherein:

the fifth layer is between the first layer and the second layer, and the sixth layer is between the second layer and the third layer;

the fifth layer comprises at least one member selected from the group consisting of fourth polyolefin, polystyrene and polyurethane; and

the sixth layer comprises at least one member selected from the group consisting of fifth polyolefin, polystyrene and polyurethane.

Claim 40: The process according to Claim 29, wherein the second layer consists essentially of at least one member selected from the group consisting of polyester, and first polyamide.

Claim 41: The process according to claim 40, wherein:

the second layer has a thickness of from about 5 to 20 percent, based on a total thickness of the multilayer film; and

the fourth layer has a thickness of less than about 15%, based on a total thickness of the multilayer film.

Claim 42: The process according to claim 40, wherein the first polyamide comprises at least one member selected from the group consisting of polyamide 6, polyamide 66, polyamide 9, polyamide 10, polyamide 11, polyamide 12, polyamide 69, polyamide 610, polyamide 612, polyamide 6I, polyamide 6T, and copolymers thereof.

Claim 43: The process according to claim 29, wherein the casing film has biaxial orientation, and a free shrink, at 185°F, of at least 10% in at least one direction.

Claim 44: The process according to claim 43, wherein at least a portion of the casing film comprises a crosslinked polymer network.

Claim 45: The process according to claim 29, wherein the backseam casing is a lap-seal backseam casing.

Claim 46: The process according to claim 29, wherein the second layer comprises the first polyamide and further comprises a third polyamide.

Claim 47: The process according to claim 29, wherein the second layer has a thickness of from 5% to about 20% of a total thickness of the heat-shrinkable casing film total film thickness.

Claim 48: A process for making a backseamed casing, comprising:

(A) preparing a multilayer heat-shrinkable film comprising:

- (i) a first outer layer serving as an inside casing layer, the first outer layer comprising a first polyolefin, the first outer layer having a surface energy level of less than about 34 dynes/cm;
- (ii) a second layer comprising at least one member selected from the group consisting of polyester and a first polyamide; and

(iii) a third layer serving as an outside casing layer, the third outer layer comprising at least one member selected from the group consisting of a second polyolefin, polystyrene and a second polyamide; wherein the second layer is between the first layer and the third layer, and the second layer has a thickness of at least 5% of a total thickness of the heat-shrinkable casing film, and the first outer layer does not comprise a blend of a propylene/ethylene copolymer and homogeneous ethylene/alpha-olefin copolymer having a density of less than 0.90 g/cc wherein the blend makes up a majority of the first outer layer;

(B) wrapping the film longitudinally around a forming shoe with opposing length film sheet edges being overlapped or abutted with one another;

(C) sealing the film longitudinally to form a backseam; followed by

(D) forwarding the film.

Claim 49 (canceled)

Claim 50: The process according to Claim 48, wherein the second layer comprises the first polyamide.

Claim 51: The process according to Claim 50, wherein the first polyamide comprises at least one member selected from the group consisting of polyamide 6, polyamide 66, polyamide 9, polyamide 10, polyamide 11, polyamide 12, polyamide 69, polyamide 610, polyamide 612, polyamide 6I, polyamide 6T, and copolymers thereof.

Claim 52: The process according to Claim 51, wherein the first polyamide comprises at least one member selected from the group consisting of polyamide 6, polyamide 6I, polyamide 6T, and copolymers thereof.

Claim 53: The process according to claim 48, wherein the second polyolefin has a vicat softening point of at least 90°C, and the third polyolefin has a vicat softening point of at least 90°C.

Claim 54: The process according to claim 48, wherein the casing film has biaxial orientation, and a free shrink, at 185°F, of at least 10% in at least one direction.

Claim 55: The process according to claim 48, wherein at least a portion of the casing film comprises a crosslinked polymer network.

Claim 56: The process according to claim 48, wherein the backseamed casing is a lap-seal backseamed casing.

Claim 57: The process according to claim 48, wherein the second layer comprises the first polyamide and further comprises a third polyamide.

(9) Evidence Appendix

None

(10) Related Proceedings Index

None